From: Farguharson, Chenise
To: (b) (6)
Cc: Kemme, Sara; Uzoukwu, Chinyere
Subject: RE: Section 609 Certified/Approved Equipment
Date: Thursday, January 26, 2023 10:22:00 AM

Dear Mr. Hartline,

I apologize for not responding to your emails sooner. We appreciate your extensive research and the information you've shared with the Agency.

Perhaps I misunderstood the initial question submitted by the technician in November 2022. I read it to mean that the MVAC system was solely being charged with refrigerant with the use of only stand-alone scales, manifold gauges, and vacuum pumps without the use of any EPA-approved/certified recharging equipment (i.e., certified by EPA or an independent standards testing organization (e.g., UL or Intertek)) meeting specific SAE standards based on the refrigerant in the MVAC. I'm sorry for any confusion this may have caused.

Per the requirements at 40 CFR 82.34(a), "No person repairing or servicing MVACs for consideration, and no person repairing or servicing MVAC-like appliances, may perform any service involving the refrigerant for such MVAC or MVAC-like appliance: (1) Without properly using equipment approved pursuant to § 82.36…." Per 40 CFR 82.32(e), "Properly using means using equipment in conformity with the regulations set forth in this subpart, including but not limited to the prohibitions and required practices set forth in § 82.34, and the recommended service procedures and practices for the containment of refrigerant set forth in § 82.36(a) and appendices A, B, C, D, E, and F to this subpart, as applicable. In addition, this term includes operating the equipment in accordance with the manufacturer's guide to operation and maintenance and using the equipment only for the controlled substance for which the machine is designed."

The lists of EPA-approved/certified equipment are available on our website at https://www.epa.gov/mvac/section-609-certified-equipment. These recover/recycle/recharge equipment are certified to meet specific SAE standards, which in some cases allow for the use of additional servicing tools and equipment (e.g., vacuum pumps, manifold gauge sets, scales, etc.) that can be attached to the MVAC system during certain service operations. For example, EPA approved/certified HFO-1234yf recovery/recycling/recharging equipment must meet the SAE J2843 standard. SAE J2843 allows for the use of other servicing equipment and tools (e.g., refrigerant leak detectors and refrigerant identifiers) that can be attached to the MVAC system and may/may not need to meet other relevant SAE standards.

EPA adopts the most current versions of SAE standards by incorporating them by reference into the regulations under Title VI of the Clean Air Act to provide additional flexibility for industry stakeholders that wish to select recovery, recycling, and/or recharging equipment certified to these standards. Each SAE standard is specific to the refrigerant and type of servicing being performed. Technicians should use EPA-approved/certified refrigerant handling equipment certified to meet specific SAE standards, based on the refrigerant in the MVAC system, and adhere to the servicing specifications described in the standards.

Please let us know if you have questions about a specific refrigerant and/or SAE standard.

Best regards,
Chenise

_____
Chenise Farquharson
U.S. Environmental Protection Agency
Office of Atmospheric Programs
Stratospheric Protection Division
Alternatives and Emissions Reduction Branch
202-564-7768
Farquharson.chenise@epa.gov

From: Glenn Hartline (b) (6)
Sent: Friday, January 13, 2023 9:56 AM
To: Farquharson, Chenise <Farquharson.Chenise@epa.gov>
Subject: Section 609 Certified/Approved Equipment

Good morning,

I am writing to get information that has been discussed among professional certified MVAC technicians of the International Automotive Technicians Network (iATN) regarding "tools and equipment" used in diagnosing, servicing, repairing, and maintaining MVACs.

https://www.iatn.net/

The main underlying reason for this E-mail is that a technician has contacted the EPA and the EPA person wrote back, "the use of a vacuum pump, scale, and manifold, etc. would be a violation of the requirements at 40 CFR 82:36 to use EPA approved equipment when servicing motor vehicle air conditioners for consideration (i.e., payment in any form)."

Maybe the question posed to the EPA representative was not clear.

The EPA has wording that relates to MVACs, specifically where "service for consideration" is an element and the technician/business is receiving compensation, and mentions in general that the certified technician and business use refrigerant handling equipment that has been certified by the EPA or an independent standards testing organization approved by EPA to certify equipment. Other EPA wording states "approved certified equipment."

Professional certified MVAC technicians are aware that the all-in-one types of refrigerant handling equipment such as RHSes, ACSes, or types of recovery equipment must be certified by the EPA or an independent standards testing organization approved by EPA to certify equipment. These types of equipment are not in question and professional MVAC certified technicians understand that refrigerant must not be vented, including handling/recovering/recycling by certified/approved equipment, and/or recovering and recycling, and/or recovered and the reclamation process or

destruction by an approved entity.

The question surrounds the so-called terminology of the wording certified/approved equipment.

Some technicians (such as the technician that contacted the EPA) argue that no other tools and equipment can ever be used if not certified by the EPA or an independent standards testing organization approved by EPA to certify equipment. And, that nothing can ever be attached to any MVAC system other than an RRR/RHS/ACS. Some technicians believe that a certified recovery-only machine cannot be attached to an MVAC to recover refrigerant; ever.

Other technicians argue that the certified/approved equipment is intended to mean equipment such as RRRs, RHSes, ACSes, or recovery equipment that must be certified by the EPA or an independent standards testing organization approved by EPA to certify equipment. And, that as long as refrigerant is recovered/reclaimed or recovered/recycled/recharged, and handled properly without venting; other tools and equipment can be used to diagnose, service, repair, recharge and maintain MVACs. Such other tools and equipment may include non-certified tools and equipment such as valve core tools, system charged - valve core replacement tools, sealant detection devices, refrigerant analysis devices, Recycle Guard™, manifold gauges, SMART manifolds, stand-alone refrigerant identifiers, micron gauges, vacuum pumps, wireless refrigerant probes, and all associated and/or inclusive tools and equipment. Additionally, when refrigerant has been recovered, an empty system can be charged by means of a refrigerant gauge set, refrigerant SMART manifold, refrigerant system vacuum pump, refrigerant digital charging scale, and virgin refrigerant; including using virgin refrigerant in an MVAC system to help diagnose where a fault may be with/within an RRR, RHS, or ACS, or other diagnostic needs.

Professional certified MVAC technicians argue that newer technology/technologies have surpassed and continue to surpass predecessor technology/technologies. Newer technology/technologies continue to be above any minimum standards set by the EPA.

Professional certified MVAC technicians argue that a knowledgeable certified technician/business that has an RRR, RHS, ACS, or recovery equipment (certified), but uses other proper dedicated equipment such as in the following link to add to and aid in servicing, repairing, and diagnosing MVAC systems (that would not be considered venting) should be able to use such equipment professionally, including in charging aspects. The following link is just one example:

https://www.trutechtools.com/trutech-tools-complete-vacuum-recovery-and-commissioning-kit.html

Professional certified MVAC technicians argue that the use of such equipment in the above link is highly relevant to servicing, repairing, charging, diagnosing, and maintaining MVAC systems, the same as other industries (properly used and where refrigerant is contained).

Professional certified MVAC technicians argue that in addition, newer complex vehicle refrigerant systems, EV high-voltage vehicle refrigerant systems, and complex HV heat pump vehicle refrigerant systems can require more at times than an RRR, RHS, ACS can offer regarding diagnosing and

charging. Equipment such as the additional non-certified equipment mentioned in the link above can be critical in many cases due to newer technologies.

Professional certified MVAC technicians argue that no one is saying that technicians and repair facilities should be without an RRRs, RHS, ACS, or recovery equipment (certified), but if the EPA is saying technicians can never-ever use anything else (period), technicians will not be able to do their jobs properly, efficiently, and professionally.

Again, the EPA person wrote back to a technician asking questions and the EPA person responded back with, "the use of a vacuum pump, scale, and manifold, etc. would be a violation of the requirements at 40 CFR 82:36 to use EPA approved equipment when servicing motor vehicle air conditioners for consideration (i.e., payment in any form)."

Professional certified MVAC technicians argue that as long as a technician/business is in compliance of not venting and properly handles the refrigerant, other tools and "dedicated" equipment can be used that is so-called not certified, such as where a system is empty as an example: a SMART manifold (including wireless inclusions), a digital refrigerant system vacuum pump, a digital refrigerant system electronic scale (including wireless inclusions), and a virgin tank of refrigerant may be used. This would include using a SMART manifold for specific diagnostics that an RHS/ACS would be incapable of doing.

Professional certified MVAC technicians argue that another type of example is where a refrigerant identifier or sealant detection device shows that the refrigerant cannot be recovered and recycled by an RHS/ACS. In such cases, dedicated equipment must be used.

Professional certified MVAC technicians argue that moisture activation sealant detection devices are not certified by the EPA, but professional technicians use such devices when necessary.

Example:

https://www.mybacharach.com/product/quickdetect-ac-sealant-detection-kit/

Professional certified MVAC technicians argue that another example may be when systems are contaminated in other ways as well where a technician/business would not want to ruin/contaminate an expensive refrigerant handling system (RHS); a certified recovery unit, along with other non-certified equipment can be used that would not violate EPA rules and regulations when following all rules and regulations to prevent refrigerant release/venting. Such equipment would include a proper certified recovery machine, a proper rated/approved refrigerant tank, and a proper dedicated refrigerant gauge set for the refrigerant, as well as a collection/reclamation facility if/when necessary. The following is just one example, which is also used by vehicle dealerships as well:

Example:

https://rotunda.service-solutions.com/en-US/Pages/ItemDetail.aspx?SKU=023-

25700#:~:text=The%20Robinair%2025700%20is%20a%20contaminated%20recovery%20only,the%20Contaminated%20Refrigerant%20Tank%20Assembly%20%28Part%20%23%20023-17990%29.

Once again, the EPA person wrote back to a technician asking questions and the EPA person responded back with, “the use of a vacuum pump, scale, and manifold, etc. would be a violation of the requirements at 40 CFR 82:36 to use EPA approved equipment when servicing motor vehicle air conditioners for consideration (i.e., payment in any form).”

I would like to offer supporting documentation examples beforehand, so that whoever replies from the EPA can see that some research on the subject matter was done, and is highly relevant regarding manifold gauge sets and other equipment, including charging with such, and specifically mentioned by the EPA for use.

Please consider the following in its entirety:

Appendix A to Subpart B of Part 82 - Standard for Recycle/Recover Equipment

Recommended Service Procedure for the Containment of R-12

4. Service With Manifold Gage Set

4.1 Service hoses must have shutoff valves in the high, low, and center service hoses within 12 in (30 cm) of the service ends. Valves must be closed prior to hose removal from the air-conditioning system. This will reduce the volume of refrigerant contained in the service hose that would otherwise be vented to atmosphere.

4.2 During all service operations, the valves should be closed until connected to the vehicle air-conditioning system or the charging source to avoid introduction of air and to contain the refrigerant rather than vent open to atmosphere.

4.3 When the manifold gage set is disconnected from the air-conditioning system or when the center hose is moved to another device which cannot accept refrigerant pressure, the gage set hoses should first be attached to the reclaim equipment to recover the refrigerant from the hoses.

https://www.ecfr.gov/current/title-40/chapter-I/subchapter-C/part-82/subpart-B

Recovering Contaminated Refrigerants

Technicians must recover any contaminated or unfamiliar refrigerant before repairing or recharging an MVAC. EPA prohibits venting all automotive refrigerants, with the exception of carbon dioxide (R-744). The best way to recover contaminated or unfamiliar refrigerants is to dedicate a recover-only unit to impure refrigerants. Some equipment manufacturers also offer recover-only units designed to remove these refrigerants.

Some refrigerants might be contaminated with flammable substances such as propane and butane.

Learn your equipment's safety features to guard against the risk of ignition.

Technicians should recover the refrigerant into standard U.S. Department of Transportation (DOT)-certified, gray-with-yellow-top recovery tanks. If the tank is not equipped with a float valve (which serves as overfill protection), make sure it is never filled beyond 60 percent of its gross-weighted capacity, as specified in the SAE J1989 and J2211 standards.

If MVAC service is not a large portion of your business, contact a nearby shop that may have the equipment necessary to recover contaminated refrigerants or unknown refrigerants.

https://www.epa.gov/mvac/handling-contaminated-automotive-refrigerants

R-1234yf Service Hose, Fittings and Couplers for Mobile Refrigerant Systems Service Equipment J2888_201902

This SAE Standard covers fittings, couplers, and hoses intended for connecting service hoses from mobile air-conditioning Systems to service equipment such as charging, recovery and recycling equipment. (Figure 1) This specification covers service hose fittings and couplers for MAC service equipment service hoses, per SAE J2843 and SAE J2851, from mobile air-conditioning systems to service equipment such as manifold gauges, vacuum pumps, and air-conditioning charging, recovery and recycling equipment.

https://www.sae.org/standards/content/j2888_201902/

MVAC Refrigerants

Unique Fittings

Each SNAP-approved refrigerant is required to be used with a unique set of fittings to prevent the accidental mixing of different refrigerants. These fittings are attachment points on the car itself, on all recovery and recycling equipment, on can taps and other charging equipment, and on all refrigerant containers. An adapter should not be used to convert a fitting.

https://www.epa.gov/mvac/epa-regulatory-requirements-mvac-system-servicing

MVAC Refrigerants

Unique Fittings

Each SNAP-approved refrigerant is required to be used with a unique set of fittings to prevent the accidental mixing of different refrigerants. These fittings are attachment points on the car itself, on all recovery and recycling equipment, on can taps and other charging equipment, and on all refrigerant containers. An adapter should not be used to convert a fitting.

Unique fittings help protect the consumer by helping to protect the purity of refrigerant in their

vehicle. For a list of the MVAC refrigerant unique fittings see "MVAC Refrigerants Fitting Sizes and Label Colors."

Applicability of Unique Fittings to Manifold Gauges and Refrigerant Identifiers

A standardized fitting may be used at the end of hoses attached to manifold gauges or a refrigerant identifier, but unique fittings must be permanently attached at the ends of the hoses that attach to MVAC system and servicing equipment.

Adapters for one refrigerant may not be attached and then removed and replaced with the fitting for a different refrigerant. The guiding principle is that once attached to a hose, the fitting is permanent and cannot be removed.

https://www.epa.gov/mvac/epa-regulatory-requirements-mvac-system-servicing

In conclusion:

Can you please elaborate if no other equipment can never-ever be used except so-called certified equipment such as a Refrigerant Handling System (RHS); ever? (Basically, that is what is being interpreted by some MVAC technicians.)

Can you please elaborate if no other equipment can never-ever be used with regard to what the EPA person wrote back to a technician asking questions and the EPA person responded with, “the use of a vacuum pump, scale, and manifold, etc. would be a violation of the requirements at 40 CFR 82:36 to use EPA approved equipment when servicing motor vehicle air conditioners for consideration (i.e., payment in any form)?”

There are many professional certified MVAC technicians using a host of equipment above and beyond any minimum standards that are necessary to do what needs to be done professionally. Technologies have surpassed many minimum standards, all-inclusive without venting (as de-minimis).

There are many professional certified MVAC technicians that rely on using gauge sets, and/or attaching wireless refrigerant probes and using a SMART manifold . . ., properly hooked to an MVAC refrigerant system . . ., in “test driving” situations where such in-the-shop diagnostics may not and/or cannot reveal certain problems and maladies without driving the vehicle. Professional certified MVAC technicians cannot test drive a vehicle with an RHS attached to a vehicle refrigerant system.

If the above situations are EPA violations because no other equipment can never-ever be used except “certified refrigerant handling equipment,” and such non-certified equipment (such as gauge sets in micron technology applications, diagnostics, charging verifications, charging systems with diagnostics needs, contaminations and other situations, and all associated inclusions) are not valid, please elaborate and let me know.

Lastly, with your permission, I would like to post the response to the International Automotive Technicians Network (iATN) if you respond back that it is okay to do so.

Thanks in advance,

Glenn Hartline